Consolidated Edison Company of New York, Inc.

Report on Preparation and System Restoration

Tropical Storm Isaias

August 2020

New York, New York
October 13, 2020

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I. EXECUTIVE SUMMARY

On Tuesday, August 4, 2020, Tropical Storm Isaias inflicted significant damage on Con Edison's service territory. Wind gusts of up to 70 miles per hour in New York City and 59 miles per hour in Westchester County caused thousands of trees to fall. New York City alone recorded more than 11,000 down and damaged trees. Entire trees and tree limbs collapsed onto Con Edison poles, wires, and equipment. The damage to the Company's infrastructure was so severe that it required whole sections to be rebuilt rather than just repaired. Nearly 330,000 customers lost power. In the Company's history, only Superstorm Sandy caused more outages.

Isaias had a much more severe impact on Con Edison's service territory than was predicted. On Tuesday morning, both the National Hurricane Center and the Company's meteorologist predicted that the storm would hit just west of New York City, with the likely result that its strongest winds would miss the Company's service territory. However, just hours before impact, the storm swung approximately 35 to 40 miles west towards Pennsylvania. This unexpected shift caused the storm's strongest winds, including gusts of up to 70 miles per hour, to barrel down directly on the Company's service territory.

When the storm was over, Con Edison immediately began restoration efforts. By day's end on August 6, the Company had restored approximately 60 percent of impacted customers. A day later, the Company had restored 75 percent, and by August 9, it had restored 90 percent. The Company restored all remaining customers by August 12.[1] Despite the extensive damage, the Company's restoration pace after Isaias was significantly faster than after other major storms with

[1] Because the restoration of all customers exceeded three days, Con Edison is submitting this report on its preparation and response to Tropical Storm Isaias. 16 NYCRR Part 105.4(c).

overhead damage. The Company restored an average of 2,150 customers per hour, which is 1.5 times faster than after Hurricane Irene, and 2.7 times faster than after Winter Storms Riley and Quinn.

The faster pace was the result of the Company's preparation, which reflects its policy of staffing above a storm's forecasted impact. Isaias became a tropical storm on Thursday, July 29, when it was 200 miles south of Puerto Rico.[2] Over the next five days, the Company tracked the storm and secured additional restoration workers. When the storm hit, the Company had 835 restoration workers on site and ready to go – more workers than required by its storm action plan[3] and more workers than it had in advance of Superstorm Sandy. Prior to the storm's westward swing, the Company expected that it would have a staffing "buffer" that would expedite restoration. Even though the storm was more severe than expected, the Company's preparation placed it in a strong position to respond to the extensive damage.

When the Company saw the extent of the storm damage, it mobilized its Corporate Emergency Response Center and tried to obtain additional restoration workers. Because Isaias was a regional event that affected the East Coast,[4] qualified workers were in high demand. The Company worked through the established mutual aid process and supplemented that effort by obtaining contractors on its own. For the first time, the Company activated a program that it had created after Winter Storms Riley and Quinn and flew in 100 restoration workers from across the

[2] *See* Appendix A for Con Edison's weather and impact forecasts from July 30 to August 4.

[3] The Company's storm preparation and response follows its 2020 Electric Emergency Response Plan. Con Edison's Plan was approved by the Public Service Commission on May 14, 2020 in Case 19-E-0742. A redacted version is available on the Commission's website.

[4] Isaias caused significant damage to the areas surrounding the Company's service territory and affected almost three million customers from the Carolinas to Vermont.

country and equipped them with overhead bucket trucks that it had previously secured as part of this initiative. In total, the Company obtained 2,280 additional restoration workers after the storm hit. The Company's peak restoration workforce of employees and outside restoration workers was 2,911. Overall, during this restoration effort, the Company used 1.6 times as many overhead restoration workers than were used during the same period for Superstorm Sandy.

The Company's electric system investments made it easier to restore service and prevented outages in the first place. The Company invests significant funds each year in storm hardening measures and the Company estimates that its storm hardening investments prevented approximately 90,000 outages during Isaias.

After Winter Storms Riley and Quinn, the Company began investing $25 million annually to fortify Westchester's overhead electric-delivery system. In addition, the Company has overhead reliability programs in New York City overhead areas. Thus far in 2020, the Company has spent more than $16 million on projects in Westchester and approximately $10 million in Staten Island, Brooklyn, and Queens. Through these programs the Company has installed stronger utility poles, and more resilient overhead cables. [5] The Company has also installed additional smart switches and fuses on overhead lines to more effectively isolate damaged sections of the system, limiting the number of customers interrupted, and completed projects that increase operators' ability to restore customers remotely from control centers.[6]

[5] The Company has installed 3.7 miles of new aerial cable and replaced 9.7 miles of primary open wire cable.

[6] The Company has completed 42 projects that increased the number of switches on its overhead system including 27 "Kyle" – Single Triple Single Smart Recloser Switches, 14 Vacuum Recloser Switches, 27 SCADA GANG Switches and 24 Fused Trip Savers. In addition, the Company split two feeder loops which. increased the number of segments on primary feeders and autoloops thereby reducing the number of customers that lose power when overhead lines are damaged.

The Company's hazard tree program also reduced the storm's damage. The Company classifies trees as hazard trees if they are located on private property and not in the municipal right of way and pose a danger to the Company's electric infrastructure because of their poor health and proximity to Company equipment. After Winter Storms Riley and Quinn, the Company began a program to remove hazard trees in Westchester County and New York City and has since removed more than 1,170 at a cost of approximately $2.3 million. Had the Company not removed these trees, it is likely that Isaias would have caused worse damage to the Company's electric system.

The Company's smart meter program also helped produce a more efficient storm response. The Company used information from its 2.6 million smart meters to assess the scope of the outages. Later, the Company used the smart meters to validate that 18,000 customers had been restored which helped the Company avoid unnecessarily dispatching crews to approximately 3,500 jobs.[7] The Company is working on integrating smart meter data into its outage management system and Outage Map as part of its overall smart meter deployment plan.

After every storm, the Company reviews its performance to prepare for the next event. Part of this review includes areas that are essential in every storm response, including customer communications, coordination with municipalities, and the performance of each operating region's impact model. Another part of this review includes accounting for the increasing frequency and severity of major storms, both in the Company's impact models and more generally. For example, after Winter Storms Riley and Quinn, Con Edison secured additional restoration workers through right of first refusal contracts. The Company also created a program to fly in restoration workers

[7] Smart meters allow the Company to send (i.e., "to ping") power status verification checks to multiple customer meters associated to a device in a sysring Winter Storms Riley and Quinn, the Company avoided unnecessary dispatches for 130 jobs.

and supply them with overhead bucket trucks. The Company is looking at ways to augment these efforts and has already begun the process of purchasing additional trucks.

The Company's efforts to enhance performance during restoration have yielded benefits, and the Company will continue to implement new initiatives. However, the last decade demonstrates that storms are increasing in frequency and severity. Customer and societal reliance on very reliable electric service continues to grow and that reliance will grow further as New York moves toward electrification of heating and transportation and a cleaner energy future. In order to significantly enhance the resilience of the overhead electric distribution system, the Company must partner with government and other stakeholders to discuss investments or actions, such as undergrounding and more aggressive tree removal, that could mitigate the effects of climate change. Because these investments are longer term and entail significant costs, they raise numerous questions involving items such as prioritization, program pace, and how public policy might facilitate the effort and mitigate costs. Given this, the Company encourages, and is ready to participate in, a dialogue among customers, government, emergency response partners, and other stakeholders.

II. STORM PREPARATION – OPERATIONS

In the days preceding Isaias, the Company tracked the storm and secured additional restoration workers. The Company's weather forecasts were consistent with the most likely scenarios published by the National Weather Service. The Company staffed above its impact forecast and had a staffing "buffer." However, hours before the storm hit, it made an unexpected westward shift that put the Company's service territory directly in the path of the storm's worst

winds. Nevertheless, the Company's preparation and ability to ramp up quickly resulted in a faster restoration pace than after Hurricane Irene and Winter Storms Riley and Quinn.

A. Forecasting and Staffing

Con Edison's storm preparation begins with weather forecasts. The Company's meteorologists track storms from their inception and produce weather forecasts tailored to the Company's service territory.[8] The forecasts rely on data from radar, satellite, and weather station sources; Numerical Weather Prediction models and Model Output Statistics;[9] the National Weather Service; and a vendor that provides forecast data to utilities and other companies.

The next step is the impact forecast. The Company uses an impact model for each geographic operating region[10] to estimate the number of job tickets (i.e., outage jobs) that a storm will cause in the region. The impact models rely on data from past storms and use the current forecast as an input to predict job counts. The models also include variables for peak wind gust, peak wind gust calibrated by direction and occurrence (i.e., the number of days since the peak wind gust last occurred from a similar direction), rainfall, snowfall, snow-liquid ratio, foliage, soil moisture (derived from US Geological Survey streamflow data sensors), severe thunderstorms,[11]

[8] In addition to these responsibilities, the Company's meteorologists provide long range weather forecasts, conduct research on adverse weather risks and vulnerabilities, investigate ways to improve the Company's overhead and underground system impact models, attend and make presentations at industry conferences, and participate in the Company's climate change mitigation efforts.

[9] Numerical Weather Prediction models use supercomputers to predict the future state of the atmosphere. Model Output Statistics use historic actual weather data to improve the Numerical Weather Prediction models.

[10] The Company's operational areas are Bronx/Westchester, Brooklyn/Queens, Manhattan, and Staten Island.

[11] This is a binary variable drawn from National Weather Service storm reports. It looks at thunderstorms causing wind-related damage and/or wind gusts greater than 57 miles per hour and hail greater that 1 inch in diameter or tornados.

flooding[12] and "major storms."[13] The models correlate these variables to daily overhead outage job information and adjust the number of overhead outage jobs to account for the increase in force resulting from an increase in wind speed. The Company's meteorologists review the output of the models, adjust them based on probability and other factors, and then publish their final impact forecast for each operating region.

The Company's meteorologists annually update the impact model for each region to reflect recent storms and evaluate new variables.[14] The most important changes the meteorologists made after Winter Storms Riley and Quinn were to the "major storm" variable. The meteorologists modified the variable to account for water level at the Kings Point, New York tide gauge,[15] which increased the value of strong east/southeast winds in the model.[16] In 2019, the meteorologists added a new variable – "momentum" – to account for strong winds over multiple days.[17] The Company also modified the "major storm" variable for the Staten Island and Brooklyn/Queens operating areas to condition the variable on peak gust.[18]

[12] This is a binary variable drawn from National Weather Service storm reports. It focuses on major river flooding or coastal flood events.

[13] This variable is activated if a tropical cyclone (cyclones that have or have had sustained winds greater than 39 miles per hour) tracks within 200 miles of New York City.

[14] The Company develops new variables through research, practical experience, and feedback sessions with operational employees.

[15] The Company has observed a high correlation between water levels at Kings Point and high impact events, including Winter Storm Riley. This water level variable helps account for the typical weather setup from major storms – a large area of low pressure near NYC with strong winds offshore helping to push water into Long Island Sound.

[16] The Company also adjusted the wet snow variable to show the overhead impact for cases with more than three inches of wet snow (this change more closely matches the impact of Winter Storm Riley and Quinn).

[17] This variable uses peak wind gusts from two consecutive days.

[18] This limits false alarms for events with high water levels and low wind gusts.

The Company uses its weather and impact forecasts as an input in Company decision making for a storm. Among other things, the Company uses them to initiate planning, assign a category to the storm, mobilize Company and external resources to a range of pre-determined minimum staffing levels,[19] and as a trigger to initiate certain communications with customers, government officials, the media, and emergency response personnel. The Company makes its final staffing decisions based on the weather and impact forecasts and other factors. The most important factor is the Company's goal to safely and expeditiously restore customers following storms in order to meet customer expectations for shorter outage periods. This typically results in the Company securing staffing above levels indicated by the weather and impact forecasts, which is what the Company did for Tropical Storm Isaias.

1. Pre-Impact Forecasts and Staffing

On Friday, July 31, Isaias was a category 1 Hurricane located 500 miles southeast of Miami, Florida. The Company's meteorologist identified two likely scenarios for how the storm would affect Con Edison's service territory. In the first scenario, the storm would behave like Tropical Storm Fay, which had hit the service territory on July 10. Fay was a minor event for the Company. It brought sustained winds of up to 29 miles per hour and peak gusts of up to 46 miles per hour. In the second scenario, Isaias would bring rain, but no wind impact. The meteorologist communicated to the Company that some combination of these scenarios was most likely. In order to be well positioned to restore customers in a timely manner, the Company exercised its right of first refusal contracts and secured 70 contractors for storm restoration.

[19] See Appendix B for the Company's minimum staffing matrices for each operating region. These matrices are reviewed by Department of Public Service Staff and included in Con Edison's 2020 Electric Emergency Response Plan ("2020 Electric ERP") (Section 4.4.).

On Saturday, August 1, the meteorologist's weather forecast for Isaias was sustained winds up to 25 miles per hour and gusts of up to 35 miles per hour.[20] Because the meteorologist did not materially change his forecast from Friday to Saturday, the Company did not seek additional restoration workers.

On Sunday, August 2, the meteorologist predicted a westward shift in the storm's track, sustained winds of up to 40 miles per hour, and gusts up to 55 miles per hour. Because the meteorologist forecasted increased winds and a westward shift, the Company's three overhead operating regions decided to mobilize to the "Serious" level for August 4[21] and the Company decided to activate its Distribution Engineering Situation Room and the Logistics Operations Control Center for August 4. The Company then sought and obtained an additional 120 restoration workers. Acquiring these workers put the Company over its minimum required staffing levels. As of Sunday, the Company had a projected staffing "buffer" for the storm.

On Monday, August 3, the meteorologist predicted sustained winds of up to 45 miles per hour and gusts of up to 60 miles per hour. Based on this information and discussions with operating personnel, the Company's Bronx/Westchester operating region upgraded its mobilization for August 4 to a Serious 2B. Out of an abundance of caution, the Company sought an additional 150

[20] The Company's references to sustained winds and peak wind gusts are the highest predicted gusts for the entire service territory. Predicted and actual sustained wind and peak wind gusts were higher in New York City thank Westchester.

[21] The Brooklyn/Queens and Staten Island regions mobilized to a Serious level. The Bronx/Westchester region mobilized to a Serious 2B.

restoration workers from the North Atlantic Mutual Assistance Group, but they were not available.[22]

On the morning of Tuesday August 4, several hours before the storm hit the Company's service territory, its path was roughly the same as Monday night with slightly higher winds. The meteorologist predicted sustained winds of up to 45 miles per hour and gusts of up to 65 miles per hour.

B. Tropical Storm Impact

Just a few hours before impact, the fast-moving storm unexpectedly tracked about 35 to 40 miles west towards Pennsylvania. This shift caused the storm's worst winds, including peak gusts of up to 70 miles per hour, to directly hit the Company's service territory. This caused extensive and unexpected damage to the Company's electric infrastructure. As a result, nearly 330,000 customers lost power. Had the storm remained on the forecasted path, its strongest winds would have missed Con Edison's service territory.

Had the storm's last-minute shift and accompanying winds been a likely forecast over the weekend, the Company would have acted then to secure additional restoration workers beyond those it had already sought. Similarly, if over the weekend the Company could have modeled the storm's actual winds and last-minute westward shift, its impact models, which are an input into staffing decisions, would have been closer to the actual outcome. However, even with a perfect forecast, the impact models would not have predicted the extraordinary number of outage jobs that

[22] North Atlantic Mutual Assistance Group members submit requests for mutual assistance crews during organized calls. Crews are distributed based on availability and members often do not have their entire request met. Many members did not release crews for availability because they were also in the path of the storm. As a result, Con Edison did not obtain all the resources it needed for storm restoration from the North Atlantic Mutual Assistance Group but also pursued contractor resources on its own. *See* Appendix C for the Company's requests and the resulting staffing.

occurred.[23] The Company's models already account for many of the factors that contributed to the storm's severity, and the Company is continuing to investigate why this storm caused such a high number of outages. As it does for every storm, the Company will incorporate this storm's results and adjust its models accordingly. Moreover, as further discussed in Section V, the Company is reviewing its models and considering opportunities for enhancements.

III. EVENT RESPONSE

Tropical Storm Isaias caused extensive damage in the Company's service territory and to the Company's equipment. The Company recorded 4,378 down wires and 454 damaged poles. The Company would eventually handle 5,089 outage jobs.

The Company began safety and restoration work almost immediately.[24] Recognizing the historic number of outages, the Company obtained additional restoration crews, mobilized its Corporate Emergency Response Center, and worked to safely restore customers as soon as possible.

A. Additional Staffing

Because the storm caused significant regional damage, contractors and mutual assistance crews were difficult to obtain after the Company secured its initial group of additional restoration workers. Initially, the North Atlantic Mutual Assistance Group was unable to meet all the Company's requests, so the Company sought support from other sources, including flying in over

[23] A little less than a month earlier, the models were on target. For Tropical Storm Fay, which hit the Company's service territory on July 10, 2020, the Company's impact models predicted between 22 and 178 outage jobs. The actual number was 126 outage jobs.

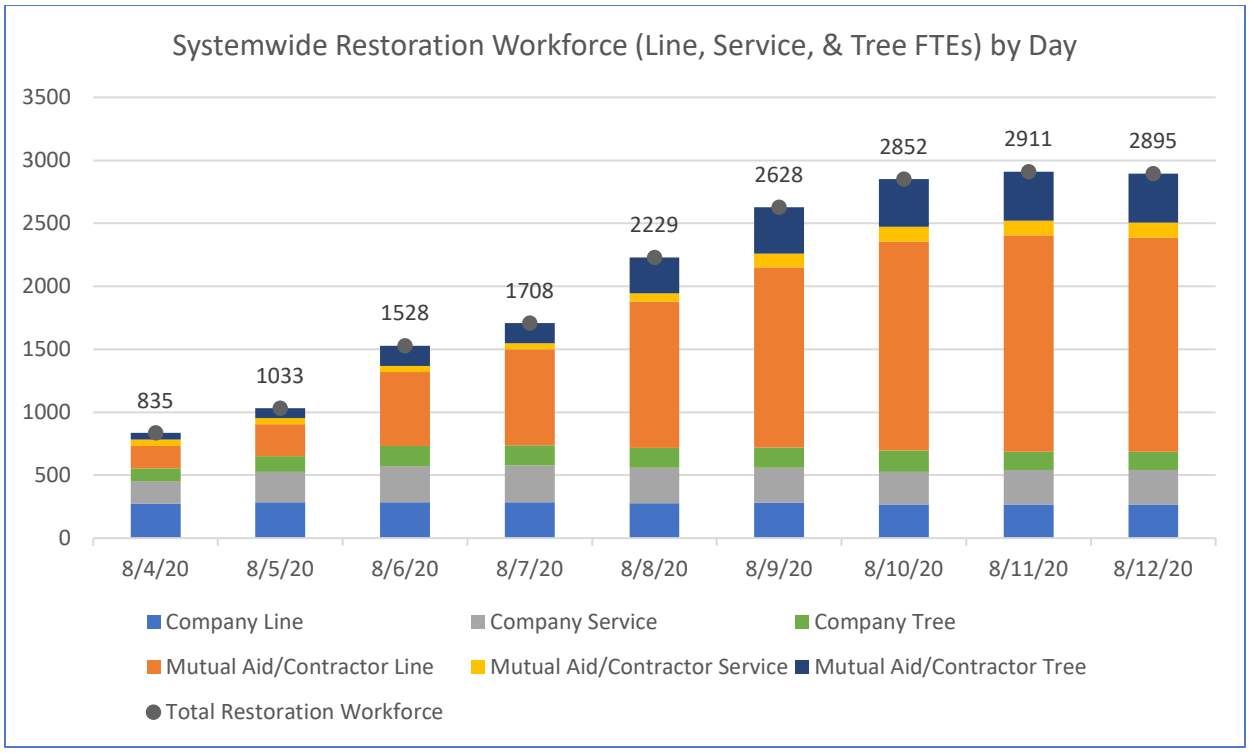
[24] Start of restoration is the time when field personnel can be dispatched without unacceptable safety risks and the potential for additional damage to Con Edison's electric systems is low. Because Tropical Storm Isais moved from South to North, on August 4 each overhead operating region established a separate start of restoration time on August 4 as follows: Staten Island - 4:00 p.m.; Brooklyn/Queens – 4:30 p.m., and; Bronx/Westchester – 6:00 p.m.

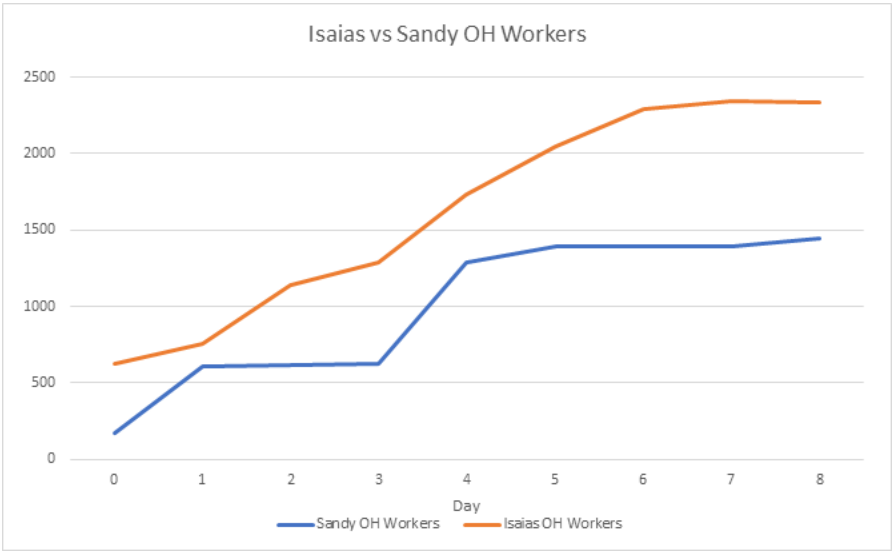
100 contractors from across the country. Ultimately, the Company's aggressive efforts resulted in securing an additional 586 contractors on top of the 334 it had mobilized before the storm. As restoration workers became available through the North Atlantic Mutual Assistance Group, the Company obtained an additional 1,259 workers from as far away as Wisconsin, Colorado, and Texas. In total, the Company had 2,179 contractor and mutual assistance workers to aid in restoration.

External Resources Secured by Day

Date	Total FTEs Secured	Contractors Secured through Con Edison sources	North Atlantic Mutual Assistance Group (Allocations)
Pre-Storm	334	334	0
08/04	71	50	21
08/05	542	361	181
08/06	313	0	313
08/07	125	70	55
08/08	576	53	523
08/09	218	52	166
Total	**2,179**	**920**	1,259

As restoration progressed, the Company reached a peak workforce of 2,911 restoration workers, which included employee, contractor, and mutual assistance workers. Overall, during storm restoration, the Company had 1.6 times as many overhead restoration workers as it had for Superstorm Sandy.


Systemwide Restoration Workforce (Line, Service, & Tree FTEs) by Day
3500
3000
2500
2000
1500
1000
500
0
835
1033
1528
1708
2229
2628
2852
2911
2895
8/4/20
8/5/20
8/6/20
8/7/20
8/8/20
8/9/20
8/10/20
8/11/20
8/12/20
Company Line
Company Service
Company Tree
Mutual Aid/Contractor Line
Mutual Aid/Contractor Service
Mutual Aid/Contractor Tree
Total Restoration Workforce


Isaias vs Sandy OH Workers
2500
2000
1500
1000
500
0
0
1
2
3
4
5
6
7
8
Day
Sandy OH Workers
Isaias OH Workers

B. Damage Assessment and Work Planning

Restoration involves assessing damage, developing work plans, and assigning jobs to crews. Damage assessors provide detailed visual reports that the Company uses to develop a restoration plan.[25] The Company's damage assessors use a mobile application to transfer information from the field to engineers who plan and design restoration jobs. Following Winter Storm Riley and Quinn, Con Edison increased the number of damage assessors and training. During the restoration, the Company fielded and performed assessment on over 9,000 tickets.

For a "Serious" event like Tropical Storm Isaias, the Company requires 65 damage assessors over a 24-hour period. For Isaias, the Company more than tripled these minimum staffing requirements. On August 4, the day of the storm, the Company had 219 damage assessors mobilized to evaluate customer outages and equipment damage.

On August 5, the Company upgraded its event classification to "Full Scale 3B." For a Full-Scale 3B event, the Company requires 205 damage assessors over a 24-hour period. Although it had already exceeded these minimum staffing requirements, the Company ramped up to 404 damage assessors. The Company deployed more than 500 damage assessors from August 7 to August 9 before scaling down to approximately 300.[26]

[25] 2020 Electric ERP (Section 5.3.2). In addition to damage assessors, Con Edison's overhead troubleshooters, construction crews and supervisors conduct damage assessment in the first 24 hours following a storm.

[26] *See* Appendix D for Damage Assessor Staffing.

The Company's priorities during restoration are public and worker safety,[27] critical facilities,[28] outages that affect a large number of customers, and any remaining individual service outages.[29] Every night during Isaias restoration, the Company developed a work plan based on these priorities. The next day it distributed work assignments to crews. The Company bundles work assignments by geographic proximity to minimize crew travel time.

The Company used a "cell" structure to manage the restoration work.[30] This allows the Company to assign a manageable workload to each cell to assist with proper oversight.[31] Each cell includes a lead, crew guides, and designated field resources. The cell lead is a Con Edison employee who understands the Company's electric distribution system and can dispatch crews, order and conduct "switching" on the overhead distribution system,[32] and update the Outage Management System. Cell leads report to the Operations Section Chief in each region. Crew guides are in the field and report back to the cell lead on the number and qualifications of crew members, progress toward meeting estimated times of restorations, damage information, material requirements, and switch moves. Typically, the Company assigns five or six crew guides for each

[27] For public safety, the Company works with its municipal partners to cut and clear downed trees and branches, clear blocked roadways, and guard downed wires. This work often has the additional benefit of restoring customers.

[28] The Company maintains a list of critical facilities that provide essential services, are necessary for public health, or are involved in disaster or emergency recovery efforts. The list is developed in coordination with municipal officials. In addition, the Company seeks municipal input on how to prioritize the restoration sequence for critical facilities.

[29] 2020 Electric Section ERP 12.2 (Restoration Priorities and Public Safety). The Company may restore individual service outages earlier in the process when the restoration can be completed by reconnecting the service line or replacing service connections.

[30] 2020 Electric ERP 5.3.3 (Regional Operations Section).

[31] For example, work that could not be accomplished in one day was reported back to the cell lead and incorporated into the work plan for the next day so that the same crew(s) could finish the work that they had started.

[32] Cell leads can order and conduct switching which helps to expedite restoration. Sending all switching orders through the regional control center can create delays due to volume.

cell, which could have 50 to 100 field employees depending on crew make up and the number of assigned work locations.

C. Down Wires

Con Edison's plan for responding to downed wires is managed by its Regional Site Safety Units.[33] Company site safety representatives respond to municipal reports of downed wires by reporting to the site, cordoning off the surrounding area, and making the locations safe for the public and emergency responders.

For a "Serious" event like Tropical Storm Isaias, the Company requires 120 site safety representatives over a 24-hour period. For Isaias, the Company exceeded these minimum staffing requirements. On August 4, the Company had 157 site safety representatives available to respond to municipal down wire reports.

On Wednesday, August 5, the Company upgraded its event classification to "Full Scale 3B." For a Full-Scale 3B event, the Company requires 360 site safety representatives over a 24-hour period. The Company exceeded these minimum staffing requirements. On August 5, the Company had 579 Site Safety representatives available to respond to municipal down wire reports.

Throughout the restoration, the Company continued to increase its Site Safety personnel. Between August 7 and August 12, the Company had over 1,000 site safety representatives per day available to respond to municipal down wire reports. That is more than three times the required minimum.[34]

[33] 2020 Electric ERP (5.3.2 Regional Planning Section).

[34] *See* Appendix E for daily Site Safety staffing in each overhead electric region.

The Company received a total of 825 down wire tickets from municipal emergency officials during Tropical Storm Isaias. Where a municipal responder was on location, the Company responded to 77 percent of down wire tickets in 36 hours. This freed the municipal responders to return to their other public safety duties. Overall, the Company responded to 52 percent of these reports within 36 hours.[35]

D. Materials and Staging Areas

The Company maintains an inventory of supplies and equipment to respond to significant storms.[36] For Isaias, the Company had confirmed in advance that critical storm restoration materials were in stock and available.[37] Throughout the restoration, the Company was able to replenish all materials required for restoration.

During major storms, the Company uses staging and material laydown areas to coordinate crew activities, minimize the time to get equipment to crews, and efficiently deploy resources. On August 4, the Company opened a staging area at the Westchester Marriott in Tarrytown and a material laydown area at Cunningham Park in Queens. On August 5, the Company opened an additional staging area at Citi Field in Queens,[38] a second material laydown area at the Westchester Marriot, and a material laydown area for mutual assistance crews at the Company's Victory Boulevard location in Staten Island. On August 9, in response to the increase in mutual assistance

[35] *See* 2020 Electric ERP 12.2.1 (Downed Wire Prioritization) (Appendix 11 Downed Wire Guideline) for more information on downed wires requirements.

[36] In January 2020, the Company conducted its annual storm material review and restocked or replaced all materials needed to respond to a major storm.

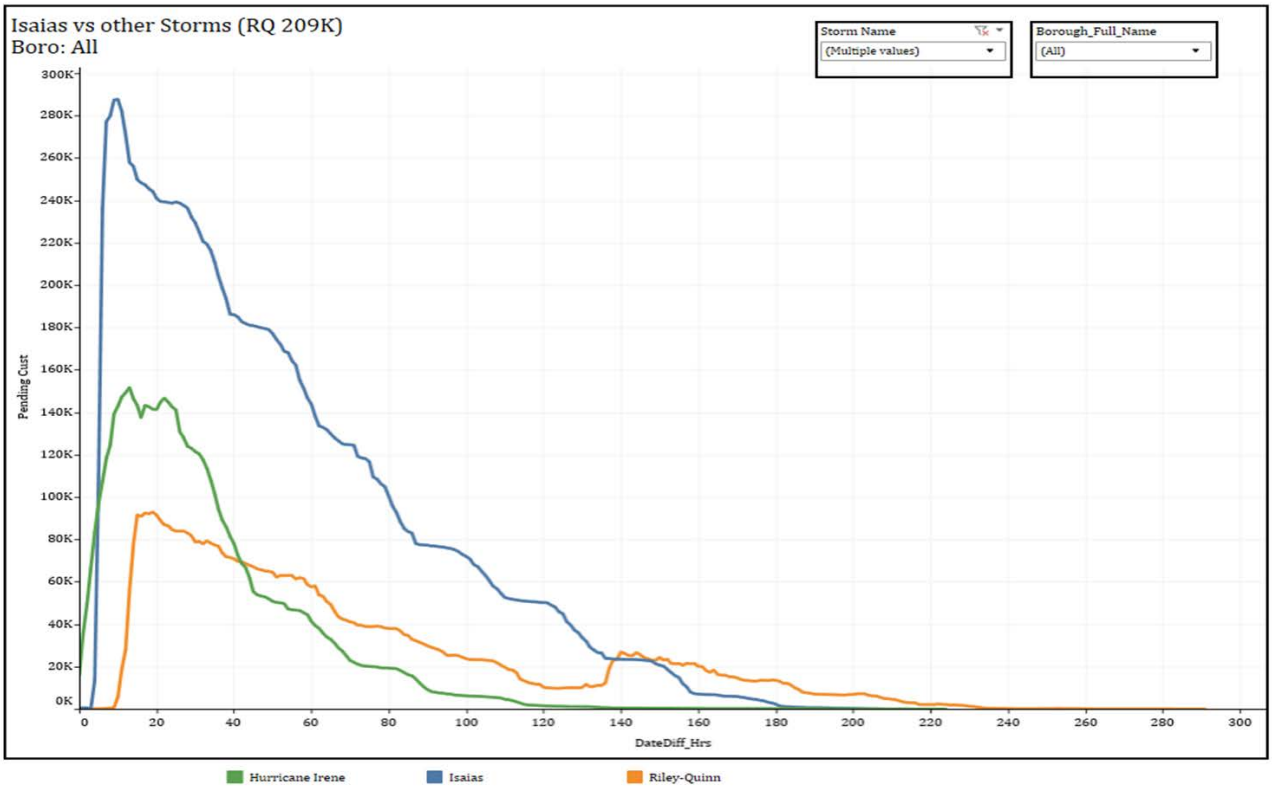
[37] The Company conducts a review of emergency storm stock annually on June 1 prior to the Atlantic hurricane season.

[38] Opening the Citi Field location allowed the Company to move resources from the Cunningham Park laydown area (a much smaller site) and close it down.

crews arriving for the restoration, the Company opened a staging area at Rye Playland in Westchester and a material laydown area at FDR Park in Westchester County.

E. Restoration

The Company's efforts resulted in a faster restoration pace than for Hurricane Irene and Winter Storms Riley and Quinn. For Isaias, the Company restored an average of 2,150 customers per hour, which is 1.5 times faster than Hurricane Irene, and 2.7 times faster than Winter Storms Riley and Quinn. By day's end on August 6, the Company had restored approximately 60 percent of customers. A day later, the Company had restored 75 percent, and by August 9, it had restored 90 percent. The Company restored all remaining customers by August 12.



IV. COMMUNICATIONS AND OUTREACH

The Company recognizes that during outages municipal emergency services need timely information to mobilize as quickly and effectively as possible. Con Edison coordinated closely with emergency personnel from New York City and Westchester County in preparation for and during the storm.[39]

The Company also communicated with customers, elected officials, the media, and the public before and during the storm through phone calls, text messages, e-mails, press releases, press briefings, social media, and the Company's website. While the Company worked to restore power to customers, the Company also established mobile Customer Information Centers to assist customers in person and to distribute dry ice.

A. Customer Outreach

Con Edison uses text messages, automated outbound phone calls, e-mails, website content (including the Outage Map), interactive voice response messages, and live agent calls to communicate directly with customers regarding outages and restoration status. Following Winter Storms Riley and Quinn, the Company created a dedicated outage team to improve communications with customers before, during, and after outage events. Based on customer feedback, the Company expanded text messaging and increased communication frequency.[40] In addition, the Company used

[39] Corporate Policy 810-2 Corporate Affairs' Crisis Communications Plan. For more information about the communications discussed in this section, *see* Appendix F, Corporate Communications.

[40] Based on customer feedback requesting more frequent contact, Con Edison provided customers who reported outages with a series of regular automated updates following Isaias timed as follows: *During Damage Assessment / Public Safety Message*; *After Damage Assessment / Initial ETR Message*; *During Restoration / Updated ETR Message; During Restoration / Daily Reminder Message*, and; *Power Has Been Restored / Restoration Message*. Con Edison planned the content and timing of these updates prior to the storm and sent automated daily notifications to outage customers until their power was restored.

e-mail blasts, its website, media, social media, and advertising campaigns to remind the public of the importance of reporting power problems to Con Edison.

1. Pre-Storm Proactive Text and Email Messages

Con Edison classified Tropical Storm Isaias at the "Serious" level and sent proactive text messages to residential customers to warn them of the coming storm, provide safety tips, and encourage outage reporting via text. [41]

On August 3, Con Edison sent a pre-storm email (English and Spanish) to more than 1.6 million customers.[42] The Company's email included storm information, safety tips, contact information, and information on Con Edison's storm preparation.

During the restoration, the Company sent more than 2.5 million email updates to specific customers and regions. These emails provided safety tips and information on obtaining restoration times, contacting the Company, and filing a claim.

2. Customer Service, Outage Reporting, and Updates

Con Edison provides multiple options for customers to report outages and obtain restoration information. Customers can use the website ("Report a Service Problem"), text, speak with a customer service representative, or use the interactive voice response system. Con Edison also sent outage updates to customers based on the customer's communication preference.[43] During the

[41] Customers with cell phone numbers on file with Con Edison can simply text OUT to 688243 to report their outage.

[42] 2020 Electric ERP 8.2.4 Pre-Storm Email Blasts.

[43] All customers do not report their service outages. Nearly 330,000 customers lost power, but the Company received only 176,112 outage reports.

storm, 87 percent of customers reported outages through self-service and 13 percent spoke to a customer service representative.

i. Self Service Outage Reporting and Updates

For Isaias, customers reported 89,035 outages online (51 percent of reported outages), 38,332 outages by text (22 percent of reported outages), and 24,318 outages using the Company's interactive voice response system (14 percent of reported outages).[44]

To receive status updates, customers used the "check outage status" function on the Company's website over 81,000 times and clicked on the Outage Map nearly 500,000 times. Overall, the Company saw a 133 percent increase in average daily website views as compared to the prior two months. The Company also sent 302,149 update texts to customers.

The Company also uses the interactive voice response system for recorded messages that provide safety tips and restoration updates, and that direct callers to the website for information on ice distribution. From August 4 through August 12, the Company updated its interactive voice response messages 27 times after issuing press releases. The Company updated 25 of the 27 interactive voice response messages within one hour of a press release.[45]

ii. Call Center

Con Edison has a toll-free customer service number that customers can use to report electric service outages, receive an estimated restoration time, speak with a customer service representative,

[44] 2020 Electric ERP Section 8.3.1 (Customer Calls)

[45] One update took 63 minutes and one took 86 minutes. An update at 11:07 a.m. on August 5 covered two press releases (10:30 and 11:00 a.m.). See Appendix G for a list of interactive voice response message updates.

or receive information through the interactive voice response system.[46] In total, 21,949 customers reported outages to a customer service representative (12 percent of reported outages).[47]

For a Serious event, the Company requires 110 customer service representatives during the day, 90 during the evening, and 20 overnight.[48] The Company exceeded these minimum staffing requirements. On August 4, the Company had 375 customer service representatives during the day, 140 during the evening, and 22 overnight.

On August 5, the Company upgraded the event classification to "Full Scale 3B." For a Full-Scale event, the Company requires 325 customer service representatives during the day, 150 during the evening, and 25 overnight. The Company exceeded these minimum staffing requirements. On August 5, the Company had 430 customer service representatives during the day, 261 during the evening, and 25 overnight.

Because Tropical Storm Isaias caused many customer outages in a short period of time, Con Edison received a high volume of calls over a few hours. Although the Company faced challenges in responding to customer phone calls during the first two days of restoration, the Company answered 100 percent of customer calls in less than 90 seconds from August 6 through August 12. During the period from August 4 through August 12, customer service representatives answered 101,899 electric emergency calls, 66 percent of which were answered within 90 seconds.[49]

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[46] 2020 Electric ERP Section 8.3.2 (Call Center Staffing).

[47] 87 percent of customer reported outages through self-service options and 12 percent used the Company's call center. 2,478 outage reports (1 percent of reported outages) were received through Company control centers or from municipalities.

[48] The day shift is between 7 a.m. and 7 p.m., the night shift is between 7 p.m. and 11 p.m., and the overnight shift is between 11 p.m. and 7 a.m.

[49] *See* Appendix H for additional call center detail.

In periods of high volume, the Company routes calls to a high-volume call service which allows customers to self-report outages. Con Edison received a large number of customer phone calls on August 4 and 5 and during one 30-minute period, on August 4, from 2:00 to 2:30 p.m., received over 18,000 calls. On August 4 and 5, the Company routed over 253,000 calls to the high-volume call service. Over 102,000 of those customers sought to speak with a customer service representative instead which contributed to call wait times during the first two days. Many of these customers were seeking restoration information which, given the fact that the storm was still moving through the area or had only recently departed, was not yet available.

3. Estimated Time of Restoration

When customers experience a service interruption, the Company assigns an Estimated Time of Restoration (ETR) based on damage assessment, historical experience and an engineering analysis of the work required to restore service.[50] Con Edison issues Global, Regional, Local and customer specific ETRs.[51] Con Edison has a Regional ETR Officer in each of its operating areas who is responsible for managing regional, local, and customer specific ETRs.[52] During storms, Regional ETR Officers hold daily calls to review job status, discuss priorities, establish ETRs, and recommend changes or adjust ETRs as needed. The Company tracks ETRs through its Outage

[50] 2020 Electric ERP Attachment 12 (ETR Protocol). *See* Appendix I for Estimated Time of Restoration data.

[51] During a storm the Company is required to provide customers with four different types of ETRs. The Company believes this causes confusion for customers and will work with Department of Public Service Staff to evaluate the current process with the goal of providing customers only with the most valuable ETR data. The Company notes here that the local/municipal ETR may cause the most confusion.

[52] 2020 Con Edison Electric ERP (Section 5.3: Regional ICS Roles and Responsibilities).

Management System and typically revises a customer's ETR no more than twice before restoring power.

i. Global and Regional ETRs

The Company develops Global and Regional ETRs by entering inputs into its Storm Management module including available crews, the number of outage jobs, and preliminary damage assessments. The module produces estimates, which the Company refines using historical storm response data.

The Global ETR is the estimated restoration date for at least 90 percent of interrupted customers. For Tropical Storm Isaias, within 24 hours of the start of restoration, the Company issued a Global ETR of August 9 at 11 p.m. The Company met the Global ETR.

The Regional ETR is the estimated restoration date for at least 95 percent of interrupted customers in a region, which is defined as a borough or county. Within 48 hours of the start of restoration, the Company issued a Regional ETR of August 9 at 11 p.m. for the Bronx, Brooklyn, Queens, and Staten Island, and a Regional ETR of August 10 at 11 p.m. for Westchester County. The Company achieved each Regional ETR.

ii. Local ETRs

The Local ETR is the estimated restoration date for at least 95 percent of interrupted customers in each municipality.

The Company manages its restoration efforts on a County-wide basis in Westchester. Focusing on the County as one geographic entity is efficient for restoration because it allows for the most effective deployment of resources (i.e., jobs impacting the largest number of customers are

dispatched first). The Company's Regional ETR Officers develop Local ETRs based upon the number of customers out of service, available resources, and the prioritized work plan.

Estimating the restoration time of 95 percent of interrupted customers within a particular municipality is challenging in cases where the number of customer interruptions is relatively low. For example, during Isaias, 410 customers within a municipality lost service. The local ETR is then the time at which all but about 20 customers are restored. These are typically small, scattered outages and single service outages, which are dispatched at the end of the restoration period, in accordance with the Company's dispatch priority. In addition, development of local (municipality) ETRs is further challenged because the electric distribution system does not align with municipal boundaries, and in some cases a single outage job will impact customers in two or more municipalities.

Despite these challenges, Con Edison issued Local ETRs for each impacted municipality in Westchester County within 48 hours of the start of restoration. Con Edison met the Local ETR in 24 of 39 municipalities.[53]

iii. Customer Specific ETRs

Once a customer receives an ETR, the Company remains in contact with the customer by text or phone. The Company tracks ETRs through its Outage Management System and typically revises a customer's ETR no more than twice before restoring power. The Company also publishes individual customer ETRs on its Outage Map.[54] During Tropical Storm Isaias, the Company

[53] *See* Appendix I for Estimated Time of Restoration data.

[54] The Company updates ETRs at 11 p.m. each day.

restored 99 percent of affected customers[55] before the final ETR expired. Con Edison issued two ETRs for 84 percent of these customers.

B. Outreach to Specific Customers

1. Life Support Equipment Customers

Before and during weather events, Con Edison makes special efforts in accordance with its Electric ERP to communicate with customers who have registered as having life support equipment.[56] On Monday, August 3, the Company sent automated telephone messages to all 6,495 registered life support equipment customers. The messages notified them of the forecasted storm and recommended that they make alternative plans in the event of a service interruption, such as going to a hospital, calling 911, or using a battery back-up. The message included a priority toll-free contact number, which is always operated by a customer service representative. Throughout the storm and restoration, the Company sent daily automated phone messages to all life support equipment customers and, as described below, placed live calls to those who reported a service interruption or who the Company predicted would lose service.

On August 4, the total number of customer service representatives assigned to life support equipment customers exceeded the Company's minimum staffing requirements for the forecasted storm.[57] Once a storm hits, the Company makes two attempts in 12 hours to contact all affected life support equipment customers Throughout the storm and restoration,, the Company estimated that 1,033

[55] While most jobs receive an ETR, there are exceptions. For example, early in the response, if the Company can quickly restore a customer through field switching with emergency ties, it will immediately initiate restoration and not assign an ETR. In such cases, it is not practical to provide an ETR because the customer will likely be restored before they will have access to the ETR information.

[56] 2020 Electric ERP 8.2.1 (Pre-Storm Outbound Notifications to LSE, Special Needs and Critical Facility Customers).

[57] 2020 Electric ERP Section 8.3.3 (Storm/Incident Communications with Life Support Equipment).

life support equipment customers lost service. On its first call attempt, the Company successfully contacted 530 customers. The Company called 501 of the 503 remaining life support equipment customers (99.6 percent) a second time within the 12-hour period and successfully reached 314 additional customers.[58] Within 12 hours of their electric service interruption, 719 life support equipment customers (70 percent) answered or responded to the Company's phone calls.

The Company also measures its contact at the 24-hour mark. Of the 1,033 life support equipment customers who lost service, within 24 hours the Company either contacted or referred to an emergency services agency 1,011 (98 percent).[59] The Company referred the remaining 22 for a welfare check within 25 to 33 hours.[60]

2. Elderly, Blind, Disabled, and Medical Hardship Customers

Before and during weather events, Con Edison also makes special efforts to communicate with customers who have registered as Elderly, Blind, Disabled or Medical Hardship.[61] The Company makes pre-storm automated outbound calls to all such customers and automated outbound daily reminder calls.

[58] One of those customers was referred for a wellness check five hours after that customer lost service. The second customer was referred for a welfare check within 25 hours of losing service.

[59] Of the 22 customers the Company did not contact or refer to an emergency agency within 24 hours, 48 percent were initially assigned to customer service representatives who lost power or internet service during the storm.

[60] The Company updates the accounts of life support equipment customers who are referred to an emergency services agency for a wellness check with details of the referral and the disposition of the referral, which is supplied by the emergency services agency. The Company has documented referral notes for all 306 customers that were referred to emergency services agencies for a wellness check and has updated the accounts of 296 life support customers with dispositions from the emergency services agency. The Company has continued to request the 10 outstanding dispositions from the emergency services agency.

[61] Customer Service Procedure 2-0-1

On Monday, August 3, the Company sent automated telephone messages to 3,538 Medical Hardship customers and on August 4, to 130,576 Elderly, Blind, Disabled customers. The messages notified the customers of the forecasted storm, provided them a toll-free contact number, and recommended that they make alternative plans in case of a service interruption. Throughout the storm and restoration, the Company continued to send daily automated phone messages to these customers.

3. Critical Locations and Facilities

Starting on August 3 and continuing through August 12, Con Edison made daily automated calls to 490 critical locations, such as hospitals and dialysis centers.[62] The messages explained the storm's potential impact and recommended that customers review and initiate their emergency power plan. The messages requested that customers contact the Company if there is a power outage and gave them a dedicated toll-free number that is continually staffed by a customer service representative. In addition, during restoration the Company reached out to the 369 critical facilities that lost service to determine if the customer had generation capabilities and to establish a direct line to contact Company resources as needed.

4. Customer Claims and Post-Event Outreach

i. Claims

On Saturday, August 8, the Company issued a press release announcing that it would voluntarily reimburse customers for spoiled food, prescription medicine, or perishable commercial merchandise. The Company did this even though it was not legally required to do so and also

[62] 2020 Electric ERP 8.2 (Pre-storm/Incident Communications).

voluntarily shortened the outage period for claim eligibility from 72 to 48 hours, in part to alleviate customer hardships due to the COVID-19 pandemic. Con Edison stated it would reimburse residential customers for food and medicine spoilage up to $235 without receipts or up to $540 with receipts and would reimburse business owners for food spoilage up to $10,700 with receipts. The press release included a link to a claim form that customers could submit to a dedicated email address (outageclaims@coned.com).[63] On August 18, the Company launched a form on its website to expedite the claims process. The deadline for submitting claims was September 8, 2020. To date Con Edison has paid customers over $5.5 million for approximately 19,500 claims.

ii. Bill Credits

As required by a Commission order, Con Edison is providing bill credits to customers that were without electric service for more than three days. This one-time credit reflects a pro-rata reduction in 30-day fixed charges based on customers' average outage duration and will be posted to customers' accounts within 75 days of the customer's service restoration. Con Edison issued a press release announcing these credits on September 9, 2020.

C. Public Outreach

1. Media Communications and Press Briefings

On August 3, the Company issued a press release that warned customers about potential outages, included safety and preparation tips, and provided information on reporting outages, contacting the Company, and tracking restoration. The Company continued to issue press releases

[63] https://www.coned.com/en/about-us/media-center/news/20200808-2/additional-crews-supplement-con-edison-push-to-restore-customers

through the end of restoration. In total, Con Edison issued 32 press releases[64] that provided information on blocked roads and downed wires, geographic and community outage data, restoration efforts, estimated times of restoration, ice distribution locations, and cooling centers.

Con Edison also held daily media briefings between August 4 and August 9. Most press briefings were conducted virtually from the Company's Corporate Emergency Response Center. Con Edison President Tim Cawley participated in four of the six press briefings and Vice President of Emergency Preparedness Matt Sniffen participated in two briefings. Con Edison's Media Relations team also conducted interviews and responded to questions from the news media.

2. Website and Social Media

Con Edison uses its website to keep customers and the public informed, especially during storm emergencies. The Company's website remained available throughout the storm and restoration.

Early in the morning on August 4, the Company changed its homepage to provide easier access to storm information. Visitors to the homepage could find links to safety and outage-related information, the Outage Map, and press releases. The Company also set up a Storm Event Page to provide additional storm-related updates.

Throughout the event, the Company published 31 banner updates on its website, mobile app, and Outage Map. The Company created a storm-related image gallery, posted restoration videos, and updated its claims page. The Company updated the Isaias Event Page to reflect new

[64] Appendix J contains a list of all press releases, with active links, published by the Company from August 3 to 12. The Company posted all storm and restoration press releases to the website.

information, including ice distribution locations. Throughout the storm and restoration, the Event Page was viewed over 380,000 times.

The Company also uses social media to communicate with customers both before and during an event.[65] The Company posts safety tips, outage and restoration updates, and dry ice locations on Facebook and Twitter, its primary social media platforms.

Pre-storm, Con Edison's posts emphasized safety precautions and the Company's preparation efforts. During the storm and restoration, the Company posted an additional 138 messages with updates that mirrored the information provided in press releases and responded to nearly 5,439 messages across Twitter, Facebook, and Instagram. In addition, the Company created 13 storm related videos that drew more than 100,000 views on social media. Finally, throughout the event, the Company ran over 1.1 million social and digital ads that explained how to report an outage.

3. Mobile Customer Information Centers and Dry Ice Distribution

On August 5, Con Edison opened four mobile Customer Information Centers [66] – two in Westchester, one in Queens, and one in Staten Island – to distribute claims information and respond to customer inquiries. The Company also distributed ice at these locations on August 5.

On August 6, the Company opened two additional mobile Customer Information Centers. From August 6 through August 9, the Company staffed six Customer Information Centers and

[65] 2020 Electric ERP 7.4.2 (Social Media).

[66] CI 490-2 Customer Care Emergency Response Plan.

distributed ice at various locations in our service territory.[67] The Company selected locations based on their proximity to outage areas and because it could distribute dry ice safely and without disrupting businesses or residential locations.[68] Based on the reduction in customer outages, on August 10 the Company was able to reduce the number of information and ice locations. In total, the Company assisted approximately 5,000 customers at these centers and distributed nearly 20,000 bags of ice.[69]

D. Outreach to Municipalities, Elected Officials and Other Utilities

1. Coordination with Emergency Operations Centers

During Isaias, Con Edison assigned liaisons to New York City's and Westchester County's emergency operations centers and to the City's Downed Tree Task Force.[70] When the City's Downed Tree Task Force moved to borough-based operations on August 5, Con Edison assigned representatives to each borough command post. The City also assigned a representative to the Company's Corporate Emergency Response Center.

[67] Con Edison issued 11 press releases to inform the public of the dry ice locations. The Company also relayed this information through customer service representatives in the call center and interactive voice response system's broadcast messages (*"Be safe. Avoid downed power lines. Customers can report outages, check service restoration status, and get information on ice and mobile information center locations at www.conEd.com."*).

[68] *See* Appendix K for the list of all Customer Information Center and ice distribution locations. The Company used its current list of pre-identified potential distribution sites to identify the ice distribution locations.

[69] Con Edison's Logistics Organization had 12,000 lbs. of wet ice available on August 3 and placed the first order for dry ice on August 5. During restoration period, dry ice from contractor suppliers was limited due to CO2 shortage and Con Edison augmented its dry ice supply with wet ice to meet the daily customer demand.

[70] 2020 Electric ERP (Section 6.2: Emergency Operations Center Liaisons).

2. Government and Community Relations

Con Edison's Regional and Community Affairs staff conducted five conference calls in advance of Tropical Storm Isaias. During restoration, the Company held 31 calls with elected and municipal officials from impacted areas.[71] Although the Company had previously held such calls for Westchester officials, we also held them for New York City officials before and during Isaias. The Company also e-mailed Company press releases to New York City and Westchester County elected officials and to all New York City Community Boards.[72]

i. Municipal Liaisons

Con Edison created the Municipal Liaison Program to provide Company representatives to Westchester County's municipalities.[73] Municipal liaisons provide information to municipal officials and help prioritize restoration jobs, including public safety (e.g., downed wires and closed roads) and critical facility jobs. For Isaias, Con Edison deployed 29 Municipal Liaisons on August 5 and 10 on August 6 to the municipalities that requested them.

3. Outreach to other Utilities

Con Edison's Utility Liaison Program establishes guidelines for coordination among Con Edison, telecommunication providers, and other utilities after major events that affect the Company's service territory.[74] The Company activated the Program on August 1 and sent pre-storm

[71]The first post-storm conference call was scheduled within 12 hours of each County/Borough's start of restoration and conducted within 24 hours of each County/Borough's start of restoration. *See* 2020 Electric ERP 7.2.2 Government Relations.

[72] Corporate Instruction 810-2 Corporate Affairs' Crisis Communications Plan.

[73] *See* 2020 Electric ERP 6.3 (The Municipal Liaison Program).

[74] 2020 Electric ERP Section 6.4 (The Utility Liaison Program).

updates to Program participants. [75] The Company invited utility representatives to its Corporate Emergency Response Center. Verizon and Spectrum sent representatives.[76] Con Edison updated its partners throughout restoration, including updating telecommunication companies (Charter, Spectrum, Altice and Verizon) on their requests for assistance with priority telecommunication facilities that had lost service.

V. ACTION ITEMS

A. Storm Impact Model and Forecasting

After every storm, the Company reviews its performance to prepare for the next event. Part of this review includes accounting for the increasing frequency and severity of major storms. As discussed in this report, the storm's last-minute shift and accompanying winds deviated significantly from the forecast and resulted in widescale damage to the overhead distribution system. A forecast that anticipated the storm that actually hit the region would have resulted in the Company acquiring more line resources prior to the event. However, even with a perfect forecast, the impact models would not have predicted the extraordinary number of outage jobs that occurred. With the increasing frequency and severity of storms, the Company is committed to refining its impact models for each operating region to better account for the effects and uncertainty caused by climate change.

[75] Participants in Con Edison's Utility Liaison Program are Verizon, Verizon Wireless, Charter/Spectrum, National Grid, Avangrid USA, AT&T, PSE&G, NYC Transit, Sprint, Altice/Cablevision, Crown Castle, RCN, Lightower, United Water and Suez-NA.

[76] Verizon also sent a representative to the Company's Rye headquarters.

As part of developing impact forecasts, the Company uses impact models that consider 14 variables[77] and historic storm data. After every storm, the Company incorporates the data from that storm to improve model results for the future.

Because the damage and job totals from Tropical Storm Isaias were significantly higher than predicted by each operating region's impact model, the Company will review each model in light of lessons learned from the storm. At a minimum, the Company will evaluate adding a variable to account for overall tree health (impact of high and low soil moisture) instead of just soil saturation, investigate using a higher impact weighting to account for high winds from directions that are uncommon in the Company's service territory, and revisit storm surge as a predictor of storm strength.

In addition, the Company will continue to monitor and adapt to climate change impacts. In 2019, Con Edison completed its Climate Change Vulnerability Study, which reviewed storm surge, precipitation, and temperature impacts in its service territory. This study was the first of its kind by a New York State utility and Con Edison is currently developing a Climate Change Implementation Plan to incorporate climate projections into our day-to-day planning and operations. These changes will result in Con Edison designing, building, and operating a more resilient electric system.

In addition, the Company is exploring additional ways to review its impact model. For example, in cooperation with the State University of New York at Albany (SUNY Albany), the Company recently installed weather data sensors at various Con Edison facilities in New York City.

[77] *See* Appendix XX for the list of storm impact forecast inputs.

These sensors will collect data that SUNY Albany will use in its statewide Mesonet project.[78] Con Edison will explore ways to further develop its relationship with SUNY Albany to consider potential changes to its outage model.

B. Other Action Items

Con Edison also plans to review and seek improvements in areas where the Company did not meet its own expectations during Tropical Storm Isaias. The Company will continue to work with its municipal partners to expand the road clearing task force model to expedite road clearings. The Company will also consider technology and process improvements, including re-evaluating staffing levels, to increase our response to downed wire reports from municipal authorities.

For customer specific ETRs, the Company will seek to improve the accuracy of ETRs provided to customers restored near the end of the storm (e.g., small jobs and singles). In addition, the Company will discuss with DPS Staff the possibility of modifying the local ETR requirement. For LSE customers, Con Edison understands that they need special communications and support. The Company is looking at technology to further enhance our ability to respond to LSE customers.

VI. STAKEHOLDER DIALOGUE

The Company's significant efforts to enhance its system resilience and restoration performance have yielded benefits, and the Company will continue to implement new initiatives. The last decade, however, demonstrates that storms are increasing in frequency and severity.

[78] The Mesonet is a state-wide network of weather stations that measure temperature, humidity, pressure, solar radiation, snow depth, soil, wind speed, and wind direction. More information about the Mesonet is available at http://www.nysmesonet.org/about/welcome.

Customers rely on electric service and that reliance will increase as New York moves toward electrification of heating and transportation and a cleaner energy future.

In response to Isaias, stakeholders asked about the possibility of undergrounding Con Edison's electric system. The Company estimates that undergrounding the entire overhead portion of its system would cost approximately $50 billion. These investments are longer term and entail significant costs and they raise numerous questions involving items such as scope, prioritization, program pace and how public policy might facilitate the effort and mitigate costs. In addition, the Company estimates an individual customer cost between $15 and $20 thousand to install new equipment on their homes and businesses to connect the new underground lines. As the Company stated at the State Legislative hearing, it encourages and is prepared to hold discussions to determine if there is a consensus that the Company should commit to undergrounding, and what if any actions state and local governments should take to facilitate the process and mitigate the costs.

In addition, these discussions should include trees. Con Edison has spent between $10 and $15 million annually since 2012 on a robust tree trimming program. As the Company saw in Winter Storms Riley and Quinn, and now Tropical Storm Isaias, entire trees are toppling, or splitting in two, and damaging Con Edison's electric lines. Together, stakeholders must decide if further steps should be taken to reduce customer outages from trees.

Finally, Con Edison has undertaken several unique initiatives to bring in more restoration workers faster. The Company has retainer contracts that give it a right of first refusal for contractor overhead line workers and has flown in contractors and supplied them with trucks to expedite their arrival. As Con Edison demonstrated during Isaias, the Company is open to looking for additional ways to bring in more restoration workers and will continue to do so. To that end, the Company has

invested $20 million to purchase additional overhead trucks to have on hand when it flies in workers.

VII. APPENDICES

Appendix A – Weather and Impact Forecasts

Appendix B – Con Edison Classification and Staffing Matrices

Appendix C – North Atlantic Mutual Assistance Group – Requests for Restoration Workers

Appendix D – Damage Assessor Staffing

Appendix E – Site Safety Staffing

Appendix F – Corporate Communications

Appendix G – Interactive Voice Response Message Updates

Appendix H – Call Center

Appendix I – Estimated Time of Restoration

Appendix J – Press Releases

Appendix K – Customer Information Centers and Dry Ice Locations